

Transmitted Via Facsimile to (703) 872-9306

9D-HL-20014
PATENT

Remarks

The Office Action dated April 25, 2005, and made final, has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-5 and 7-18 are now pending in this application. Claims 1-17 stand rejected. Claims 1, 3, 7, 8, and 14 have been amended. Claim 18 has been added.

Newly added Claim 18 reinstates original Claim 6, adding no new matter.

The rejection of Claims 1-5, 7-9, 13-15, and 17 under 35 U.S.C. § 102(e) as being anticipated by Chamberlin et al. ("Chamberlin") (U.S. Patent No. 6,568,018) is respectfully traversed.

Chamberlin describes a speed sensing system for a washing machine (10) that includes a housing (12), a lid (20), and a tub (21) containing a basket 22 with an agitator (23). The basket is mounted for rotation on an output shaft (24) of a drive shaft (25). A counterweight (30) rotates with the drive shaft. The speed sensing system includes a one part speed sensor (60) that is fixedly mounted in the washer housing so as to detect the passage of the counterweight (30) as it rotates with the drive shaft. The sensor is coupled to a circuit (64) that may be used in a lid lock system. Notably, the described lid lock system operates about only one predetermined speed. "When the basket 22 is rotating above a predetermined speed, the output 206 will turn on (S) causing transistor 210 to conduct and thereby energize actuator 120 and lock the lid 20. When the speed of basket 22 falls below the predetermined speed, the output 206 will change the state of, or turn off, spin signal S thereby deenergizing actuator 120 and allowing lid 20 to be opened." (emphasis added) (col. 6, lines 6-9).

Claim 1 recites a method for controlling locking a lid of a washing machine, wherein the washing machine includes an agitation element and a basket. The method includes the steps of: "sensing a spin speed associated with a spin speed of at least one of the agitation

Transmitted Via Facsimile to (703) 872-9306

9D-HL-20014
PATENT

element and the basket, such that the sensed speed is independent of oscillations of the agitation element and the basket; and causing the lid to be locked when the sensed spin speed exceeds a first predetermined speed".

Chamberlin neither describes nor suggests a method for controlling the locking of a lid of a washing machine as recited in Claim 1. More specifically, Chamberlin does not describe or suggest sensing a spin speed associated with a spin speed of at least one of the agitation element and the basket, such that the sensed speed is independent of oscillations of the agitation element and the basket. Rather, Chamberlin describes a one part speed sensor that is fixedly mounted in the washer housing so as to detect the passage of the counterweight as it rotates with the drive shaft.. No mention is made of a sensor system wherein the accuracy of the sensed speed is not affected by oscillations in the speed of the drive system. Accordingly, for the reasons set forth above, Claim 1 is submitted to be patentable over Chamberlin.

Claims 2-5 and 7 depend from independent Claim 1. When the recitations of Claims 2-5 and 7 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-5 and 7 likewise are patentable over Chamberlin.

Claim 8 recites lid lock system for a washing machine, wherein the washing machine includes a lid, an agitation element, a basket, and a transmission and clutch system, the transmission and clutch system including a drive shaft coupled to the agitation element and basket for causing the agitation element and basket to spin, the lid lock system including "a sensor for generating an output signal associated with a spin speed of at least one of the agitation element and basket, said output signal being independent of oscillations of the agitation element and the basket; a lid lock solenoid for controlling operation of a lid lock; and a control circuit for energizing the lid lock solenoid based on the sensor output signal".

Chamberlin neither describes nor suggests a lid lock system as recited in Claim 8. More specifically, Chamberlin does not describe or suggest a lid lock system including a sensor for

Transmitted Via Facsimile to (703) 872-9306

9D-HL-20014
PATENT

generating an output signal associated with a spin speed of at least one of the agitation element and basket, wherein the output signal is independent of oscillations of the agitation element and the basket. Rather, Chamberlin describes a one part speed sensor that is fixedly mounted in the washer housing so as to detect the passage of the counterweight as it rotates with the drive shaft. No mention is made of a sensor system wherein the accuracy of the sensed speed is not affected by oscillations in the speed of the drive system. Accordingly, for the reasons set forth above, Claim 8 is submitted to be patentable over Chamberlin.

Claims 9, 13 and 17 depend from independent Claim 8. When the recitations of Claims 9, 13 and 17 are considered in combination with the recitations of Claim 8, Applicants submit that dependent Claims 9, 13 and 17 likewise are patentable over Chamberlin.

Claim 14 recites a washing machine including "a cabinet comprising an opening; a lid movable from and between an open position and a closed position over said opening; a lid lock for locking said lid in a closed position; a basket mounted within said cabinet; an agitation element mounted within said basket; a drive system coupled to said agitation element and to said basket; and a lid lock circuit comprising a sensor for generating an output signal associated with a spin speed of at least one of said agitation element and basket, said output signal being independent of oscillations of said agitation element and said basket, a lid lock solenoid for controlling operation of said lid lock, and a control circuit for energizing said lid lock solenoid based on the sensor output signal".

Chamberlin neither describes nor suggests a washing machine as recited in Claim 14. More specifically, Chamberlin does not describe or suggest a control circuit wherein a sensor for generating an output signal associated with a spin speed of at least one of the agitation element and basket, and wherein the output signal is independent of oscillations of the agitation element and the basket. Rather, Chamberlin describes a one part speed sensor that is fixedly mounted in the washer housing so as to detect the passage of the counterweight as it rotates with the drive shaft. No mention is made of a sensor system wherein the accuracy of the sensed speed is not

Transmitted Via Facsimile to (703) 872-9306

9D-HL-20014
PATENT

affected by oscillations in the speed of the drive system. Accordingly, for the reasons set forth above, Claim 14 is submitted to be patentable over Chamberlin.

Claim 15 depends from independent Claim 14. When the recitations of Claim 15 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claim 15 likewise is patentable over Chamberlin.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1-9, 13-15, and 17 be withdrawn.

The rejection of Claims 10-12 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Chamberlin in view of Huang (U.S. Patent No. 5,598,074) is respectfully traversed.

Chamberlin is described above. Huang describes virtual Hall effect signal generating circuitry that can be used in new motors or retrofit into existing motors to replace Hall effect sensors. The solid state circuitry takes the place of Hall effect sensors.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. *In re Vaeck*, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991).

The Office Action asserts that Huang describes certain advantages gained through the use of a Hall sensor and a flip flop, citing Huang at col. 2, lines 4-14. However, Huang, at col. 2, lines 4-14 states:

Transmitted Via Facsimile to (703) 872-9306

9D-HL-20014
PATENT

"The circuitry can be retrofit into existing motors which utilize Hall-effect sensors, replacing those sensors and thereby achieving the advantages of increased reliability, wider temperature operating range, etc. in a cost effective manner, i.e. without having to replace the entire existing motor drive. New motors constructed according to the present invention also achieve the desired results of increased reliability and temperature range compared to conventional brushless DC motors, have precise velocity regulation, are simple to install, and have reduced motor cost, size, and weight compared to conventional motors, and quicker response time due to reduced rotor inertia."

Thus, the advantages described are realized by replacing Hall effect sensors with Huang's solid state circuitry. Rather than teaching the use of Hall effect sensors, Huang teaches the deactivation and removal of Hall sensors in motors in favor of electronic solid state circuitry (see abstract). Therefore, Huang clearly teaches away from the use of Hall sensors. As the Federal Circuit has held, a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). No combination based on Huang can establish a prima facie case for obviousness in the use of a Hall effect sensor.

Moreover, Chamberlin and Huang teach away from their own combination. Chamberlin teaches a one part sensor for sensing the passage of a rotatable ferrous metal component of a washing machine to determine the speed of rotation of the washing machine basket. Huang, on the other hand, teaches the deactivation and removal of Hall effect sensors and replacing them with circuitry for use in a sensorless, brushless DC motor that provides output signals substantially the same as those generated by Hall effect sensors. It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). In the present case, no suggestion or motivation to combine the prior art disclosures is shown, nor has any reasonable expectation of success been shown. For the foregoing reasons alone, Applicants respectfully request that the Section 103 rejection of Claims 10-12 and 16 be withdrawn.

Transmitted Via Facsimile to (703) 872-9306

9D-HL-20014
PATENT

Nevertheless, Claims 10-12 depend from Claim 8, which recites, a lid lock system for a washing machine, wherein the washing machine includes a lid, an agitation element, a basket, and a transmission and clutch system, the transmission and clutch system including a drive shaft coupled to the agitation element and basket for causing the agitation element and basket to spin, the lid lock system including "a sensor for generating an output signal associated with a spin speed of at least one of the agitation element and basket, said output signal being independent of oscillations of the agitation element and the basket; a lid lock solenoid for controlling operation of a lid lock; and a control circuit for energizing the lid lock solenoid based on the sensor output signal".

Neither Chamberlin nor Huang, considered alone or in combination, describe or suggest a lid lock system as recited in Claim 8. More specifically, neither Chamberlin nor Huang, considered alone or in combination, describe or suggest a lid lock system including a sensor for generating an output signal associated with a spin speed of at least one of the agitation element and basket, wherein the output signal is independent of oscillations of the agitation element and the basket. Rather, Chamberlin describes a one part speed sensor that is fixedly mounted in the washer housing so as to detect the passage of the counterweight as it rotates with the drive shaft. No mention is made of a sensor system wherein the accuracy of the sensed speed is not affected by oscillations in the speed of the drive system. Huang describes signal generating circuitry to replace Hall effect sensors. Accordingly, for the reasons set forth above, Claim 8 is submitted to be patentable over Chamberlin in view of Huang.

Claims 10-12 depend from independent Claim 8. When the recitations of Claims 10-12 are considered in combination with the recitations of Claim 8, Applicants submit that dependent Claims 10-12 likewise are patentable over Chamberlin in view of Huang.

Claim 16 depends from Claim 14, which recites, a washing machine including "a cabinet comprising an opening; a lid movable from and between an open position and a closed position over said opening; a lid lock for locking said lid in a closed position; a basket mounted within

Transmitted Via Facsimile to (703) 872-9306

9D-HL-20014
PATENT

said cabinet; an agitation element mounted within said basket; a drive system coupled to said agitation element and to said basket; and a lid lock circuit comprising a sensor for generating an output signal associated with a spin speed of at least one of said agitation element and basket, said output signal being independent of oscillations of said agitation element and said basket, a lid lock solenoid for controlling operation of said lid lock, and a control circuit for energizing said lid lock solenoid based on the sensor output signal”.

Neither Chamberlin nor Huang, considered alone or in combination, describe or suggest a washing machine as recited in Claim 14. More specifically, neither Chamberlin nor Huang, considered alone or in combination, describe or suggest a control circuit wherein a sensor for generating an output signal associated with a spin speed of at least one of the agitation element and basket, and wherein the output signal is independent of oscillations of the agitation element and the basket. Rather, Chamberlin describes a one part speed sensor that is fixedly mounted in the washer housing so as to detect the passage of the counterweight as it rotates with the drive shaft.. No mention is made of a sensor system wherein the accuracy of the sensed speed is not affected by oscillations in the speed of the drive system. Huang describes signal generating circuitry to replace Hall effect sensors. Accordingly, for the reasons set forth above, Claim 14 is submitted to be patentable over Chamberlin in view of Huang.

Claim 16 depends from independent Claim 14. When the recitations of Claim 16 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claim 16 likewise is patentable over Chamberlin in view of Huang.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 10-12 and 16 be withdrawn.

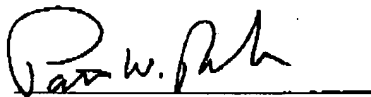
Newly added Claim 18 depends from Claim 1 which is submitted to be patentable as indicated above. When the recitations of Claim 18 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 18 likewise is patentable.

Transmitted Via Facsimile to (703) 872-9306

9D-HL-20014
PATENT

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



Patrick W. Rasche
Registration No. 37,916
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070